UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

November 14, 2001

REPLY TO THE ATTENTION OF

(SR-6J)

Mr. Steven D. Smith
Solutia, Inc.
P.O. Box 66760
St. Louis, Missouri 63166-6760

RE: Notification of Additional Work - Focused Feasibility Study
Groundwater Contamination Near Site R
Sauget Area 2 Site – St. Clair County, Illinois

Dear Mr. Smith:

The United States Environmental Protection Agency (U.S. EPA) has been reviewing the available analytical data taken in the vicinity of the Sauget Area 2 Site. U.S. EPA is particularly concerned with the groundwater quality in the vicinity of the Sauget Area 2 Site - Site R and its impact on the Mississippi River.

Both historical groundwater data and data collected by Solutia in May 2000, pursuant to a RCRA 3008(h) Order, indicates that contaminated groundwater discharges to the Mississippi River along at least a 2000-foot length of the east bank adjacent to Site R. This discharge exceeds the Illinois Environmental Protection Agency (EPA) derived water quality criteria. Modeling predicts approximately 680,000 kg/year of SVOCs and VOCs are discharging to the river.

In addition, U.S. EPA collected sediment samples from the Mississippi River from October 24, 2000, through November 3, 2000. Sampling results show that sediment is contaminated with significant concentrations of VOCs and SVOCs starting at the northern edge of Site R. Based on available information, this area is also the approximate northern boundary of the groundwater contaminant plume. Significant concentrations of VOCs and SVOCs in sediment continue along and south of Site R, the approximate southern boundary of the groundwater contaminant plume according to sampling data currently available. U.S. EPA sediment data further documents exceedances of the Illinois EPA derived water quality criteria. Groundwater data at Site R correlates well with both the type and extent of contamination found in the Mississippi River sediment.

Based on the currently available groundwater and sediment information, it is apparent that groundwater, with contaminant concentrations above acceptable levels, is discharging from Site R to the Mississippi River. U.S. EPA has determined that an immediate CERCLA response action is necessary to restrict the migration of the groundwater contamination and prevent an unacceptable discharge of contaminated groundwater to surface water in the vicinity of Site R. U.S. EPA believes sufficient data currently exists to evaluate response actions to address the environmental concerns in connection with the groundwater contaminant plume at Site R.

Pursuant to Section 2.5-Additional Work of the November 24, 2000, Administrative Order on Consent for the Sauget Area 2 Site, U.S. EPA has determined that additional work is necessary to prepare a focused feasibility study (FS) to address the known groundwater contamination problem in the vicinity of Site R. Within 45 days of receipt of this letter, Respondent(s) shall submit to U.S. EPA for approval a draft focused FS for the Site R groundwater contamination problem that is consistent with the attached scope of work (SOW).

Interim actions taken under the Additional Work section of the AOC shall not necessarily obviate the need for additional remedial measures at the Site under the Order.

If you have any questions regarding this letter, please do not hesitate to contact me at 312/886-4592.

Sincerely,

Mike Ribordy
Remedial Project Manager
Superfund Division

Enclosure

cc: Linda W. Tape, Thompson Coburn LLP
Thomas Martin, USEPA
Ken Bardo, USEPA
Peter Barrett, CH2M HILL
Sandra Bron, IEPA
Kevin de la Bruere, USFWS
Michael Henry, IDNR

ATTACHMENT A

SCOPE OF WORK FOR
FOCUSED FEASIBILITY STUDY
SITE R GROUNDWATER CONTAMINATION
SAUGET AREA 2 SITE
SAUGET AND CAHOKIA, ILLINOIS

PURPOSE:

The purpose of this Scope of Work (SOW) is to set forth requirements for the preparation of a focused Feasibility Study (FS). The FS Report shall evaluate a very limited number of alternatives for addressing the impact to human health and/or the environment from the groundwater contamination at Site R.

At the completion of the focused FS Report, U.S. EPA will be responsible for the selection of an interim Remedial Action and will document this selection in an interim action Record of Decision (ROD). The interim Remedial Action selected by U.S. EPA will meet the cleanup standards specified in CERCLA Section 121. That is, the selected remedial action will be protective of human health and the environment, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements (ARAR) of other laws, and will be cost-effective. The focused FS report, as adopted by U.S. EPA, with the administrative record, will form the basis for the selection of the interim groundwater remedy for Site R and will provide the information necessary to support the development of the interim action ROD.

SCOPE:

FOCUSED FEASIBILITY STUDY (FS)

Within 30 days of receipt of this SOW, Respondents shall submit to U.S. EPA for approval a draft FS report addressing groundwater contamination at Site R. The focused FS shall be consistent with the administrative order and this SOW. The focused FS report shall be completed in accordance with the following requirements:

1 Executive Summary
2 Site Characterization

- 2.1 Site Description and Background
  - 2.1.1 Site Location and Physical Setting
  - 2.1.2 Present and Past Facility Operations and Disposal Practices
  - 2.1.2 Geology/Hydrology/Hydrogeology
  - 2.1.3 Current and past groundwater usage in the site area

2.1.4 Surrounding Land Use and Populations
2.1.5 Sensitive Ecosystems
2.1.6 Meteorology/Climatology

2.2 Groundwater Fate and Transport

- Contaminant Characteristics
- Groundwater Fate and Transport Processes
- Groundwater Contaminant Migration Trends
- Groundwater Modeling

2.3 Previous Removal/Remedial Actions
2.4 Source, Nature, and Extent of Contamination
2.5 Analytical Data
2.6 Ecological Risk Assessment

3 Identification of Interim Remedial Action Objectives

3.1 Determination of Interim Remedial Action Scope
3.2 Determination of Interim Remedial Action Schedule
3.3 Identification of and Compliance with ARARs

4 Identification and Analysis of Interim Remedial Action Alternatives
5 Detailed Analysis of Alternatives

5.1 Effectiveness
5.1.1 Overall Protection of Public Health and the Environment
5.1.2 Compliance with ARARs and Other Criteria, Advisories, and Guidance
5.1.3 Long-Term Effectiveness and Permanence
5.1.4 Reduction of Toxicity, Mobility, or Volume Through Treatment
5.1.5 Short-Term Effectiveness

5.2 Implementability
5.2.1 Technical Feasibility
5.2.2 Administrative Feasibility
5.2.3 Availability of Services and Materials
5.2.4 State and Community Acceptance

5.3 Cost
- 5.3.1 Direct Capital Costs
- 5.3.2 Indirect Capital Costs
- 5.3.3 Long-Term Operation and Maintenance

6 Comparative Analysis of Interim Remedial Action Alternatives

7 Schedule for RI/FS Report Submission

Focused FS Outline:

1 Executive Summary

The Executive Summary shall provide a general overview of the contents of the focused FS report. It shall contain a brief discussion of Site R and the current and/or potential threat posed by groundwater contamination at Site R.

2 Site Characterization

The focused FS report shall briefly summarize available data on the physical, demographic, and other characteristics of the Site and the surrounding areas. Specific topics which shall be addressed in the site characterization are detailed below. The site characterization shall concentrate on those characteristics necessary to evaluate and select an appropriate remedy.

2.1 Site Description and Background

The site description includes current and historical information. The following types of information shall be included, where available and as appropriate, to the site-specific conditions and the scope of the remedial action.

- 2.1.1 Site Location and Physical Setting
- 2.1.2 Present and Past Facility Operations and Disposal Practices
- 2.1.2 Geology/Hydrology/Hydrogeology
- 2.1.3 Current and past groundwater usage in the site area
- 2.1.4 Surrounding Land Use and Populations
- 2.1.5 Sensitive Ecosystems
- 2.1.6 Meteorology/Climatology

2.2 Groundwater Fate and Transport

- Contaminant Characteristics
- Groundwater Fate and Transport Processes
- Groundwater Contaminant Migration Trends
- Groundwater Modeling

2.3 Previous Removal Actions

The site characterization section shall also describe any previous removal and remedial actions for Site R. Previous information, if relevant, shall be organized as follows:

* The scope and objectives of the previous removal action(s)
* The amount of time spent on the previous removal action(s)
* The nature and extent of hazardous substances, pollutants, or contaminants treated or controlled during the previous removal action(s) (including all monitoring conducted)
* The technologies used and/or treatment levels used for the previous removal action(s).

2.4 Source, Nature and Extent of Contamination

This section shall summarize all available site characterization data taken in the vicinity of Site R, including the locations of the hazardous substances, pollutants, or contaminants; the quantity, volume, size or magnitude of the contamination; and the physical and chemical attributes of the hazardous pollutants or contaminants.

2.5 Analytical Data

This section shall present the available data, including, but not limited to, soil, groundwater, surface water, and sediments. This section should discuss any historical data gaps that were identified, and the measures taken to develop all necessary additional data.

2.6 Summary of Risks

This section should focus on risks addressed by the interim action and should provide the rationale for the limited scope of the action. The rationale can be supported by facts that indicate that temporary action is necessary to stabilize the groundwater plume and to prevent further environmental degradation while a final remedial solution is

developed for Sauget Area 2 upon completion of the RI/FS. Qualitative risk information may be presented if quantitative risk information is not yet available.

3 Identification of Remedial Action Objectives

The focused FS Report shall develop remedial action objectives, taking into consideration the following factors:

* Prevention or abatement of actual or potential exposure to nearby human populations, (including workers), animals, or the food chain from hazardous substances, pollutants, or contaminants;
* Prevention or abatement of actual or potential contamination of drinking water supplies and ecosystems;
* Acceptable chemical-specific contaminant levels, or range of levels, for all applicable exposure routes.
* Mitigation or abatement of other situations or factors that may pose threats to public health, welfare, or the environment.

3.1 Determination of Interim Remedial Action Scope

The focused FS shall define the broad scope and specific short-term and long-term objectives of the interim Remedial Action and address the protectiveness of the interim Remedial Action.

3.2 Determination of the Interim Remedial Action Schedule

The general schedule for interim Remedial Action and, where appropriate, removal activities shall be developed, including both the start and completion time for the interim Remedial Action.

3.3 Identification of and Compliance with ARARs

The FS report shall identify all applicable, relevant and appropriate requirements at both the federal and state levels that will apply to the interim Remedial Action. The FS shall also describe how the ARARs will be met.

4 Identification and Analysis of Interim Remedial Action Alternatives

Based on the analysis of the nature and extent of groundwater contamination and on the cleanup objectives developed in the previous section, a limited number of alternatives (generally three or fewer) appropriate for addressing the interim remedial action objectives shall be identified and assessed.

A limited number of alternatives, including any identified presumptive remedies, shall be selected for detailed analysis. Each of the alternatives shall be described with enough detail so that the entire treatment process can be understood. Technologies that may apply to the media or source of contamination shall be listed in the FS report.

5 Detailed Analysis of Alternatives

Defined alternatives are evaluated against the short- and long-term aspects of three broad criteria: effectiveness, implementability, and cost.

5.1 Effectiveness

The effectiveness of an alternative refers to its ability to meet the objective regarding the scope of the interim remedial action. The "Effectiveness" discussion for each alternative shall evaluate the degree to which the technology would mitigate threats to public health and the environment. Criteria to be considered include:

5.1.1 Overall Protection of Public Health and the Environment

How well each alternative protects public health and the environment shall be discussed in a consistent manner. Assessments conducted under other evaluation criteria, including long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs shall be included in the discussion. Any unacceptable short-term impacts shall be identified. The discussion shall focus on how each alternative achieves adequate protection and describe how the alternative will reduce, control, or eliminate risks at the Site through the use of treatment, engineering, or institutional controls.

5.1.2 Compliance with ARARs and Other Criteria, Advisories, and Guidance

The detailed analysis shall summarize which requirements are applicable or relevant and appropriate to an alternative and describe how the alternative meets those requirements. A summary table may be employed to list potential

ARARs. In addition to ARARs, other federal or state advisories, criteria, or guidance to be considered (TBC) may be identified.

5.1.3 Long-Term Effectiveness and Permanence

This evaluation assesses the extent and effectiveness of the controls that may be required to manage risk posed by treatment of residuals and/or untreated wastes at the Site. The following components shall be considered for each alternative: magnitude of risk; and adequacy and reliability of controls.

5.1.4 Reduction of Toxicity, Mobility, or Volume Through Treatment

Respondents' analysis shall address U.S. EPA's policy of preference for treatment including an evaluation based upon the following subfactors for a particular alternative:

* The treatment process(es) employed and the material(s) it will treat
* The amount of the hazardous or toxic materials to be destroyed or treated
* The degree of reduction expected in toxicity, mobility, or volume
* The degree to which treatment will be irreversible
* The type and quantity of residuals that will remain after treatment
* Whether the alternative will satisfy the preference for treatment

5.1.5 Short-Term Effectiveness

The short-term effectiveness criterion addresses the effects of the alternative during implementation before the remedial objectives have been met. Alternatives shall also be evaluated with respect to their effects on human health and the environment following implementation. The following factors shall be addressed as appropriate for each alternative:

* Protection of the Community
* Protection of the Workers
* Environmental Impacts
* Time Until Response Objectives are Achieved

5.2 Implementability

This section is an assessment of the implementability of each alternative in terms of the technical and administrative feasibility and the availability of the goods and services

necessary for each alternative's full execution. The following factors shall be considered under this criterion:

5.2.1 Technical Feasibility

The degree of difficulty in constructing and operating the technology; the reliability of the technology, the availability of necessary services and materials; the scheduling aspects of implementing the alternatives during and after implementation; the potential impacts on the local community during construction operation; and the environmental conditions with respect to set-up and construction and operation shall be described. Potential future removal actions shall also be discussed. The ability to monitor the effectiveness of the alternatives may also be described.

5.2.2 Administrative Feasibility

The administrative feasibility factor evaluates those activities needed to coordinate with other offices and agencies. The administrative feasibility of each alternative shall be evaluated, including the need for off-site permits, adherence to applicable non-environmental laws, and concerns of other regulatory agencies. Factors that shall be considered include, but are not limited to, the following: statutory limits, permits and waivers.

5.2.3 Availability of Services and Materials

The focused FS must determine if off-site treatment, storage, and disposal capacity, equipment, personnel, services and materials, and other resources necessary to implement an alternative shall be available in time to maintain the remedial schedule.

5.2.4 State and Community Acceptance

State and community acceptance will be considered by U.S. EPA before a final interim remedial action is decided upon. Respondents need only mention in the FS report that U.S. EPA will consider and address State and community acceptance of an alternative when making a recommendation and in the final selection of the alternative in the interim action ROD.

5.3 Cost

Each alternative shall be evaluated to determine its projected costs. The evaluation should compare each alternative's capital and operation and maintenance costs. The present worth of alternatives should be calculated.

5.3.1 Direct Capital Costs

Costs for construction, materials, land, transportation, analysis of samples, treatment shall be presented.

5.3.2 Indirect Capital Costs

Cost for design, legal fees, permits shall be presented.

5.3.3 Long-Term Operation and Maintenance Costs

Costs for maintenance and long-term monitoring shall be presented.

6 Comparative Analysis of Interim Remedial Action Alternatives

Once interim remedial action alternatives have been described and individually assessed against the evaluation criteria described in Section 5, above, a comparative analysis shall be conducted to evaluate the relative performance of each alternative in relation to each of the criteria. The purpose of the analysis shall be to identify advantages and disadvantages of each alternative relative to one another so that key trade offs that would affect the remedy selection can be identified.

7 Schedule for FS Report Submission

A draft focused FS report shall be submitted to U.S. EPA and Illinois EPA within 30 days of receipt of this SOW. The amended FS report if required, shall be submitted to U.S. EPA and Illinois EPA within 20 days of the receipt of U.S. EPA's comments on the draft focused FS report.

Following U.S. EPA approval of the FS report, U.S. EPA will issue a Proposed Plan to the public wherein U.S. EPA will propose one, or a combination, of the alternatives evaluated in the FS. Public comments will be solicited and evaluated before U.S. EPA makes a final decision on a remediation plan. The final decision will be documented in the interim action ROD for Site R.